STEVEN GERALD KIRKWOOD

IBLA 88-212 Decided September 14, 1989

Appeal from a decision of the Wyoming State Office, Bureau of Land Management, increasing the annual rental for noncompetitive oil and gas lease W-104507.

Affirmed.

1. Oil and Gas Leases: Burden of Proof--Oil and Gas Leases: Known Geologic Structure

   Where a dry hole adjacent to leased land is surrounded by producing wells and noncommercial producers exhibiting positive drill-stem tests for oil, a lessee's contention that a known geologic structure does not underlie his lease or that the structure in question is not productive is not proved.

APPEARANCES: Steven Gerald Kirkwood, pro se; Lowell L. Madsen, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Denver, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE ARNESS

Steven Gerald Kirkwood has appealed a decision of the Wyoming State Office, Bureau of Land Management (BLM), dated December 23, 1987, increasing the annual rental for noncompetitive, nonproducing oil and gas lease W-104507 because the lands are within a known geologic structure (KGS). Appellant's lease, effective June 1, 1987, embraced lots 1, 2, 7, and 8, sec. 28, T. 52 N., R. 69 W., sixth principal meridian, Campbell County, Wyoming. BLM's decision increased the annual rental rate on appellant's lease from $1 to $2 per acre through the fifth lease year. BLM's deter-mination that the leased lands are within an addition to the Upper Minnelusa KGS is based on a November 16, 1987, BLM geologic report focussing on the Muddy Sandstone horizon.

BLM's geologic report states that the Muddy Sandstone reservoirs are primarily stratigraphic in nature, laterally discontinuous, and are often vertically stacked. The sand horizons are limited in extent by loss of porosity and/or permeability due to lateral and vertical facies changes. The geological conditions observed in the lower Cretaceous Muddy Sandstone are explained by deposits of interbedded sandstones, siltstones, and shales on the erosional surface of Skull Creek.

According to BLM's report, the Muddy Sandstone formation in the Northern Powder River Basin was deposited during an overall marine transgression with several regressive pulses. Transgressive and regressive pulses caused the sediments of one cycle to become deposited on top of sediments from previous Muddy depositional events resulting in encased shale or siltstone sand bodies. Although the encased shale or siltstone sand bodies are commonly vertically stacked and generally limited in horizontal extent, BLM explains that the overall formation is horizontally extensive and can be easily correlated across the Powder River Basin. BLM has interpreted this stratigraphy as containing a single trap composed of laterally discontinuous and vertically stacked hydrocarbon reservoirs and has combined and mapped the vertically stacked hydrocarbon-bearing Muddy Sandstone reservoirs as one sand, using methodology and criteria described in the geologic report. BLM previously employed the stacked-sand mapping concept in a similar large-scale review of the Upper Minnelusa Formation in the Powder River Basin.

In connection with the original Upper Minnelusa KGS determination effective April 3, 1987, BLM generated a Minnelusa Structure Contour Map, Opeche Shale Isopach Map, Upper Minnelusa Net Porosity Map, and a Net Hydrocarbon Bearing Upper Minnelusa Porosity Map which are attached to the geologic report in the case file. Drilling in the area at the time the November 1987 report was prepared, the report states, necessitated revision of these maps to reflect new data. The new data, including data values from geophysical well logs and other pertinent test data, were used to determine the amount of net Upper Minnelusa Hydrocarbon-Bearing Porosity present in each well.

The revised isopach map, according to the report, represents that por-tion of the Upper Minnelusa which has greater than or equal to 10-percent porosity and contains moveable hydrocarbons. The zero-foot line encompasses all Minnelusa oil and gas production wells with Minnelusa test results which indicate the presence of moveable hydrocarbons (Report at 3).

BLM's revision of the boundaries of the Upper Minnelusa KGS using data from recently drilled wells resulted in the inclusion of appellant's lease in the Upper Minnelusa KGS.

A KGS is defined as "technically the trap in which an accumulation of oil and gas has been discovered by drilling and determined to be productive, the limits of which include all acreage that is presumptively productive." 43 CFR 3100.0-5(l). A KGS designation recognizes the existence of a continuous entrapping structure, on some part of which there is production. Lloyd Chemical Sales, Inc., 82 IBLA 29 (1984). The Secretary has delegated the responsibility for determining the existence and the extent of KGS's to his technical experts in the field. When these technical experts make a determination that lands qualify for inclusion in a KGS, the Secretary is entitled to rely upon their reasoned opinion absent a showing of error by a preponderance of the evidence. Celeste C. Grynberg, 107 IBLA 143 (1989).

[1] An appellant challenging a KGS determination must either show that the producing structure does not underlie the land or affirmatively establish that the land involved is not productive from the structure in question. Bender v. Clark, 744 F.2d 1424, 1429-30 (10th Cir. 1984); John R. Stamper, 110 IBLA 130 (1989); Carolyn J. McCutchin, 93 IBLA 134 (1986). A party challenging a BLM determination that lands are within a KGS has the burden of establishing by a preponderance of the evidence that inclusion of the land is erroneous. Bender v. Clark, supra; John R. Stamper, supra.

Challenging BLM's conclusion that the Upper Minnelusa structure underlies his lease, appellant points to the fact that, shortly prior to BLM's decision under review, on about December 2, 1987, the General Atlantic #2-28 Walnut well was drilled through the Upper Minnelusa at a spot approximately 1,200 feet west of the east line of his lease. Appellant argues that since the well was properly located to test any connection with the Ash Field to the southeast, and was dry and abandoned, without recovery of oil and with a thick Opeche section, inclusion of the subject lease in the Upper Minnelusa KGS addition is unwarranted.

In response to appellant's argument, BLM has furnished a map depicting the area of Upper Minnelusa oil accumulation in relation to appellant's lease. The map indicates the approximate location of the General Atlantic well (Exh. A to Answer). BLM states that the General Atlantic well is sur-rounded by two producing wells and five wells that drill-stem tested oil. Id.

Exhibit B to BLM's Answer shows production or test results for those surrounding wells. Six of the seven test results supplied by exhibit B are from wells drilled in the same section as appellant's lease. Wells reportedly drilled on three of the four lots embraced by appellant's lease had oil shows in drill-stem tests.

Thus, exhibit B shows the "1 Mary D" drilled in sec. 28, lot 2, pro-duced oil shows at a tested interval between 7,574 and 7,589 feet. Test results produced 610 feet of oil and 90 feet of oil-cut mud. The "28-1 Axel" well drilled in lot 7 of sec. 28 produced oil shows at a tested inter-val between 7,667-7,687 feet. Test results showed 177 feet of oil and 600 feet of oil-cut mud. The Davis "1 Haefele" well (Davis well) drilled in lot 8 of sec. 28 produced oil shows at the interval tested between 7,575-7,598 feet and test results revealed 40 feet of oil and 120 feet of water and 25 feet of mud-cut water. The Davis well is situated on the same lot (lot 8) as the General Atlantic well relied on by appellant.

In adjacent lot 9, the General Atlantic "28-1 Aspen" well is shown by exhibit B to be producing 303 barrels of oil per day at an interval of 7,572-7,606 feet. The "1 Ash" Davis well also situated in lot 9 of that same section produced oil shows at an interval of 7,610-7,639 feet. Test results on that well disclosed 60 feet of oil, 180 feet of heavily oil-cut mud, and 390 feet of slightly oil- and mud-cut water. The "1 Trumpach" well drilled by Frontier Refining in lot 10 of that same section produced oil shows at an interval tested of 7,642-7,666 feet with 410 feet of oil and 800 feet of oil-cut mud. The foregoing data, BLM argues, establishes that

it would be impossible to exclude appellant's lease from the Upper Minnelusa KGS based on the new General Atlantic well because three other wells on appellant's lease had previously recovered oil from the Upper Minnelusa (Answer at 4). Appellant has not replied to this data furnished by BLM.

The existence of several wells producing from the Upper Minnelusa formation on and adjacent to the lands embraced by appellant's lease refutes appellant's argument that the existence of the General Atlantic well, which was abandoned in sec. 28, shows a producing structure does not underlie the leased acreage, or that the leased acreage is not productive from the Upper Minnelusa formation. The existence of several wells with oil shows in formation in drill-stem tests conducted on and immediately adjacent to appellant's lease bolsters BLM's conclusion that appellant's lease was properly included in the Upper Minnelusa KGS. Appellant has not shown that the lands embraced by lease W-104507 are not properly included in an addition to the Upper Minnelusa KGS, nor has he shown that the decision to include his leased lands in the KGS was erroneous. (See, e.g., R. K. O'Connell, 85 IBLA 29 (1985), holding that one challenging BLM's KGS determination by alleging error in the analysis made by the agency bears the burden of proving error as alleged.)

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision of the Wyoming State Office is affirmed.

Franklin D. Arness
Administrative Judge

I concur:

Will A. Irwin
Administrative Judge